

---

## QUESTIONS AND ANSWERS ON MENINGOCOCCAL DISEASE AND MENINGITIS

---

Meningococcal disease is one of the most feared infectious diseases in the United States. Although outbreaks are rare and even individual cases are uncommon, they frequently cause great concern when they occur. Reasons include the ability of this particular disease to affect previously healthy persons without warning and cause serious illness and sometimes death. But, actually, meningococcal infections are difficult to catch. The spread of the disease can be limited by diagnosing and treating cases of disease soon after the onset of symptoms and treating all those who have had close contact with an infected person.

This Fact Sheet is intended to answer questions commonly asked by the public about meningococcal disease. Meningitis can be caused by lots of agents (viruses, fungi, and other bacteria) but this discussion will be limited to meningococcal disease.

---

### WHAT IS MENINGOCOCCAL DISEASE?

Meningococcal disease is caused by Neisseria meningitidis bacteria. The two most common types of meningococcal disease are: (1) meningitis, when the bacteria infect the fluid and the covering of a person's spinal cord and brain, and (2) infection of the bloodstream, called meningococcemia.

### WHAT ARE THE SYMPTOMS OF MENINGOCOCCAL DISEASE?

Most people who have meningitis have stiff neck, headache, and high fever. These symptoms can develop over the course of several hours, or may take 1 to 2 days to develop. Other symptoms include nausea, vomiting, discomfort with looking into bright lights, confusion, and sleepiness. Newborns and infants may not have a stiff neck but appear sluggish or irritable. Patients with bloodstream infection often have a rash beginning as a smooth red area followed by small red blotches due to bleeding into the skin.

### HOW IS MENINGOCOCCAL DISEASE DIAGNOSED?

Early diagnosis and treatment are very important. If you or a member of your family have symptoms suggesting meningitis or bloodstream infection described above, seek medical care immediately. Don't put it off. The diagnosis is usually made by growing bacteria from spinal fluid or blood. The spinal fluid is taken by performing a spinal tap, in which a needle is inserted into an area in the lower back where fluid in the spinal canal can be easily and safely reached. Identification of the type of bacteria is important for selecting the best antibiotics for treatment.

### HOW COMMON IS MENINGOCOCCAL DISEASE?

In the U.S. each year, there are 1-2 cases for every 100,000 people. It is most common in children under five years old, but during outbreaks it tends to also affect teenagers and older persons (over 60 years old). Most of the cases occur one at a time. Rarely, outbreaks occur. An outbreak is any significant increase in cases in a population above that expected, usually at least 5 cases in a population of about 100,000. Five to ten outbreaks of meningococcal disease are recognized in the U.S. each year, including 1 or 2 outbreaks or clusters in California. Outbreaks tend to occur in either schools or other institutions, where people are in close contact with each other, but can also occur in communities.

## ARE THERE DIFFERENT TYPES OF MENINGOCOCCAL BACTERIA?

Yes, there are. Most of meningococcal infections in the U.S. are caused by two types of meningococcal bacteria: B and C. Within each type there are many subtypes, called strains. Only one strain of one type will be responsible for an outbreak. Group C has caused increasing numbers of outbreaks in the U.S. and Canada over the past few years as the result of the appearance of a new strain.

Group B has caused epidemics in Europe, Cuba, and South America since 1974 due to one particular strain. This strain was first identified in California in November 1993, when it caused an outbreak in 6 students from a middle school in San Luis Obispo. In Oregon, this strain has resulted a doubling of the rate of meningococcal disease over the past two years.

## IS IT EASY TO GET MENINGOCOCCAL DISEASE?

No, it is not. The bacteria are passed only by direct and close contact with someone who is infected or is carrying the bacteria. Many people (as many as 1 in 10) carry the bacteria in the back of the nose and throat at any given time, especially in winter. While most of these people are healthy and do not themselves develop disease, they may pass the bacteria on to others. Why only a very small number of those who have the bacteria growing in the nose and throat develop disease, while others remain healthy, is not understood. Factors affecting an individual's immune system's ability to fight off the infection are important. People at increased risk of developing meningococcal disease are those living in crowded living quarters (such as prisons), those who have had recent infections of the respiratory system (such as influenza), and those exposed to cigarette smoke. Disease usually develops within two weeks after exposure.

The bacteria are transmitted from person-to-person in secretions from the nose and throat. They can live outside the body for only a few minutes, so that if the organisms are coughed onto a desk or toy, for example, they will soon die off and persons touching those objects later will not become infected. Also, the organisms cannot pass through normal skin but can enter the body through the mucous membranes of the nose or mouth or possibly the eyes. They are not spread by casual contact or by simply breathing the air near a person with disease or carrying the bacteria. They are not carried by animals or in the water or soil.

## AM I OR MY CHILD AT INCREASED RISK FOR MENINGOCOCCAL DISEASE?

You are at increased risk if you are a close contact of somebody with meningococcal disease. Close contact means living with or having intimate contact with such an individual. People in the same household and persons attending or working in the same day-care setting as an individual with disease are considered close contacts. Intimate contact means direct exposure to the secretions from the nose and throat of an infected person; examples are kissing, sharing drinks such as soda cans or water bottles, or mouth-to-mouth resuscitation. Being at increased risk means that your risk of developing meningococcal disease is significantly greater than that of other people in your community, and you should receive an antibiotic to prevent the disease. If you have been in the same school, or shared transportation, or had social contact but not had close contact with someone who recently had meningococcal disease, you are not at increased risk compared to others in your community.

You can also get the bacteria from close contact with a well person who is carrying the bacteria. In fact, most of those who develop disease have not had contact with cases: cases rarely know a case that occurred earlier. Rather, their exposure was from someone who was a healthy carrier and there is no way to know who it was.

## WHAT CAN I DO TO KEEP FROM GETTING MENINGOCOCCAL DISEASE?

If you did any of the following with a patient who did develop meningococcal disease:

- lived in the same house;
- worked (adult) or played (child) in the same day-care setting with a child patient;
- were directly exposed to secretions from their mouth or nose;

you should be treated with an antibiotic. The antibiotic is usually rifampin, given as one dose every 12 hours for 2 days (4 doses total), as soon as possible after a patient is diagnosed. It will eliminate the bacteria from the throats of most persons, therefore decreasing their risk of disease. It will usually prevent illness if given within 10 days after exposure, but it will not be effective if the bacteria have already started to move from your throat into your system. For this reason, you should be observed carefully for the development of illness even if given preventive treatment.

All of the antibiotics that can be used for prevention have side effects. Rifampin temporarily turns body fluids such as urine an orange color, and can permanently stain soft contact lenses. It can temporarily cause gastrointestinal upset, damage the liver, especially in those who already have liver disease, and can decrease the effectiveness of oral birth control drugs. It is not recommended for pregnant women since it causes birth defects in animals and the same problem might possibly occur for a baby still in the womb.

## WHAT CAN BE DONE TO CONTROL OUTBREAKS?

Control of outbreaks of meningococcal disease depends upon the prompt diagnosis and treatment of cases, prompt identification of all the known close contacts of each case, and immediate use of preventive antibiotics in each contact. For some types of meningococcal disease, a vaccine exists, but for Group B there is no vaccine commercially available.

## IS THERE ANYTHING ELSE WE CAN DO?

Yes. As a general recommendation, but particularly now, you and your children should wash hands frequently and avoid sharing drinks from the same container used by others (for example water bottles used in sports or shared soda cans) and avoid sharing of eating utensils.

## WHY SHOULDN'T EVERYONE TAKE RIFAMPIN PROPHYLAXIS?

Giving rifampin to everybody in a community with an outbreak has not been shown to be effective in controlling the outbreak, and is generally not recommended. Antibiotics, in contrast to vaccines, are effective for only a brief period of time; people can pick up and carry the bacteria again after finishing the antibiotic. If even a few persons did not receive effective treatment (for example, pregnant women or newcomers to this area after the mass preventive treatment campaign), many persons would soon become carriers again. Also, meningococcal bacteria are capable of becoming resistant to rifampin. The more that rifampin is used, the more the bacteria are likely to become resistant to it, and then rifampin will no longer be useful to prevent illness in contacts of a patient.

## WHERE CAN I GET MORE INFORMATION?

**Your doctor or health care provider** should be your first source of information about your health and the steps you should take to protect yourself. We are making every effort to ensure that they have all the information available to do so.

**Your local health department** is available to answer additional questions you might have.